

PATENT COOPERATION TREATY

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RECD 08 DEC 2004

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

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(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P 03-251:3	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE 2003/002036	International filing date (day/month/year) 19.12.2003	Priority date (day/month/year) 20.12.2002
International Patent Classification (IPC) or national classification and IPC B60R 19/00, E01F 15/14		
Applicant VÄGVERKET et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 3 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 09.07.2004	Date of completion of this report 19.11.2004
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Form PCT/IPEA/409 (cover sheet) (January 2004)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2003/002036

REC'D 08 DEC 2004

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1 - 5 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 1 - 3 received by this Authority on 23.09.2004
- pages* _____ received by this Authority on _____
- ☐ the drawings:
- pages 1 - 3 as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE 2003/002036

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1 - 14</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1 - 14</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1 - 14</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Cited document:

D1 WO0187671 A1

D1 represents the most relevant prior art cited in the International Search Report.

D1 reveals an impact attenuation device for a vehicle which corresponds with the preamble of claim 1.

The invention according to claim 1 differs from the art known from D1 in the sense that the extension device is arranged between the front part and the attenuating part. In a first position the extension device arranges the attenuator in a transporting position, in which the attenuator is extended away from the front part. In a second position the extension device arranges the attenuator in an operating position in which the attenuator is arranged against the front part.

Therefore, the invention according to the claims is novel. The invention according to the claims is also considered to involve an inventive step and to be industrially applicable.

CLAIMS

1. Impact attenuating device (1) for a vehicle (2), comprising a front part (3) with a wheel (31), for connection to the vehicle (2), preferably to the vehicles frame side member, such that during a collision against the attenuator (1) the forces is transferred to the vehicle (2), an attenuating part (4), and a rear part (5), characterised by that an extension device (6) is arranged between the front part (3) and the attenuating part (4); that the extension device (6) in a first position arranges the attenuator in a transport position, in which the attenuator (4) is extended away from the front part (3), and in a second position arranges the attenuator (4) in an operation position in which the attenuator (4) is arranged against the front part (3)
2. Impact attenuating device (1) according to claim 1, characterised by that the attenuator (4) in the first position, transport position, is articulately arranged to the vehicle.
3. Impact attenuating device according to any of the claims 1-2, characterised by that the extension device (6) in the second position, operating position, arranges the attenuating part (4) against the front part (3) such that forces from a collision against the attenuator is transferred to the vehicle.
4. Impact attenuating device according to any of the claims 1-3, characterised by that the extension device (6) comprises a hydraulic telescopic device (61).
5. Impact attenuating device according to claim 4, characterised by that the telescopic device (61) is connected to the front part (3) via a vertical joint (62), and to the attenuating part (4) via a horizontal joint (63).
6. Impact attenuating device according to any of the claims 1-3, characterised by that the extension device (6) comprises a boom (104), arranged to a link arm (101), such that a cylinder (100) acting on

the link arm moves the attenuating part (4) out to a transport position and/or pulls the attenuating part (4) into an operating position.

- 5 7. Impact attenuating device according to claim 6, characterised by that the boom (104) is connected to the front part (3) through a vertical- and horizontal joint (103), such that the attenuating part (4) is movable as a trailer.
- 10 8. Impact attenuating device according to any of the claims 1-7, characterised by that the rear part (3) comprises a wheel (51,52).
- 15 9. Impact attenuating device according to any of the claims 1-8, characterised by that the rear part (5) comprises an operation wheel (51) with a pivot function, for use in the operating position, and two transport wheels (52) for use in the transport position.
- 20 10. Impact attenuating device according to claim 9, characterised by that the operating wheel (51) is in a lowered position in the operating position, and in a raised position in the transport position.
- 25 11. Impact attenuating device according to any of the claims 9-10, characterised by that the transportation wheels (52) is in a raised position in the operating position, and in a lowered position in the transport position.
- 30 12. Impact attenuating device according to any of the claims 1-11, characterised by that the impact attenuator (1) comprises an internal hydraulic system (10), such that the vehicles and impact attenuators hydraulic fluids are kept separate.
13. Impact attenuating device according to any of the claims 1-12, characterised by that the front part (3) comprises two wheels (31) with a pivot function.

14. Impact attenuating device according to any of the claims 1-13, characterised by that a docking device (7,8) is arranged in the front part (3) and in the attenuating part (4) to secure the rigidity of the device.